STATUS OF MAJOR FOREST INSECT PESTS

NATIONAL FORESTS. REGION 3 - SEASON OF 1952

APACHE NATIONAL FOREST. New Mexico and Arizona.

(a) Spruce Budworm. An on-the-ground inspection of spruce and fir timberlands on the Greer and Alpine Ranger Districts was made to determine the degree and extent of defoliation caused by the spruce budworm. This survey showed widespread infestations and severe defoliation in most mixed conifer stands. In local areas, defoliation is severe and is resulting in the top-killing of many trees and complete killing of the understory poles and saplings. In all areas, fir species have been more heavily attacked than the spruce, although where spruce occurs in mixture with the fir, all tree species have been heavily defoliated. This infestation appears to have occurred in outbreak proportions for the past three years over most of the area examined, and judging by the extent of defoliation during 1952, it is expected that budworm populations will be heavy again during 1953. This budworm infestation also occurs throughout the contiguous fir and spruce type on the Ft. Apache Indian Reservation but the exact scope of infestation has not been determined. The trend of populations are not known at this time and needs for control cannot be determined pending a re-survey of all areas during 1953.

(b) Spruce bark beetle. During the course of aerial reconnaissance, an alarming rater of tree-killing in the spruce stands was noted throughout the Mt. Baldy area where budworm infestations are known to be serious. The mortality in spruce, estimated to be as much as 30 percent of the green stand volume in some areas, is thought to be the result of activity by the spruce bark beetle. Although the status of the bark beetle in this stand of spruce timber has not been determined by ground checking, an explosive situation is thought to exist where the spruce stand has been weakened as a result of budworm feeding, thereby providing conditions which would favor a build-up of spruce bark beetles to heavy epidemic proportions. The current status of the bark beetle in this area and possible needs for control cannot be determined until ground surveys of the areacan be made during the summer months of 1953.

(c) Pine bark beetles. The extent and nature of tree-killing in pine stands as a result of attacks by Dendroctonus and Ips beetles indicates a low endemic rate of infestations in all areas. Tree mortality is more severe in virgin stands, as would be expected, with loss occurring as singly-infested trees scattered throughout the areas. A heavier concentration of this scattered type loss was noted in the virgin timber to the east of Fox Mountain, but this situation is not serious and there is no apparent need for direct artificial measures for control. Some tree mortality resulting from beetle attack is occurring in the reserve stands on recent cutover areas but older cuttings appear to be relatively free

of insect-caused loss. There is no build-up of loss conditions in the vicinity of the Escudilla fire although a higher rate of loss might be expected in this area during 1953. Much of the scattered tree mortality in recent cutover areas and in the virgin timber along the road screen on the Greer District might be salvaged, thereby minimizing possible heavy loss in these areas.

CARSON NATIONAL FOREST. New Mexico

(a) Tent caterpillar. The epidemic infestations of the Great Basin tent caterpillar still persist in most of the aspen stands throughout the Forest. Egg-mass surveys have been made to determine the caterpillar populations expected in recreational areas during 1953. A report of survey findings, together with recommendations for continued maintenance control in local areas, has been submitted.

(b) Black Hills beetle. Tree-killing as a result of attacks by this bark beetle appear to be local in scope and are known to be causing heavy loss only in two small areas on the Forest. A subject report covering the current status of loss in Lama Canyon, Taos District, has been submitted and it is recommended that infested trees be salvaged as a means of control. Direct artificial control measures may be necessary if salvage operations do not prove feasible.

A recent report from the Ft. Collins Laboratory indicates that another local infestation of outbreak proportions occurs in the northern portion of the Forest adjacent to the Conejos Ranger District on the Rio Grande N. F. Possible needs for control in this area will not be known pending an on-the-ground inspection of the nature and extent of the loss. A report and recommended action will be submitted when this survey is completed.

(c) Spruce bark beetle. During the course of aerial reconnaissance, several areas were noted where activity by the spruce bark beetle has caused heavy loss. In lieu of a ground survey in these areas there is no way to determine whether the spruce beetle is currently active in these stands. A reconnaissance of these areas is planned for the summer months of 1953. The current logging of spruce on private lands adjacent to the Forest may create slash material suitable for a build-up of spruce beetle populations and the subsequent killing of standing timber. A close watch will be maintained in this area to detect possible signs of increasing beetle populations and heavy loss.

CIBOLA NATIONAL FOREST. New Mexico.

(a) Fir engraver beetle. During the course of the past four years the fir engraver beetle has developed to epidemic proportions in the La Madera Area of the Sandia Mountains and currently is causing severe loss of the fir timber. An appraisal survey of this area has shown that the

infestation during 1952 has resulted in the killing of trees at a rate ranging from 2.2 - 11.3 trees per acre on approximately 2,000 acres. Control of this outbreak is urgent to protect the recreational values of the area. A report of survey results has been submitted recommending control through salvage of infested trees and the application of toxic sprays to all trees not salvable.

(b) Spruce budworm. The spruce budworm is causing limited damage by partial defoliation of fir in local areas of the Sandia Mountains but the situation is not serious at the present time and there is no need currently to plan for control. Trees that are weakened as a result of budworm feeding will be highly susceptible to attack by the fir engraver beetle; another reason for prompt suppression of the engraver beetle epidemic as noted above.

It has been found that a severe infestation of spruce budworm occurs over an area of approximately 6,000 acres of spruce and fir timber on the north and east slopes of La Mosca Peak and Mt. Taylor. This infestation appears to have been epidemic in this area for the past three or four years, and as a result, many trees have been top-killed and heavy killing is now occurring to reproduction and the understory trees. Severe loss of merchantable timber is expected in this area unless control of this infestation is obtained. Recommendations have been made for direct artificial control during June, 1953.

(c) Pine bark beetles. The current loss being sustained in ponderosa pine as a combined result of drought and attack by pine beetles is extremely heavy in several portions of the Forest. Severe tree mortality is particularly noticeable throughout the pine timber lands in the Manzano Mountains; the Magdalena Mountains; the San Mateo Mountains; the Datil Range and in portions of the Zuni Range. There is little doubt but that the severe drought years of 1950-1951 predisposed these pine stands to attack by tree-killing bark beetles. However, at the present time, large populations of beetles that developed in this drought-weakened timber are attacking and killing trees without benefit of the stand being weakened by deficiencies of moisture.

It can be expected that a decrease of epidemic populations of these bark beetles will occur as a result of natural factors, but additional heavy loss will result in all areas left to the process of natural control. The value of the resource to be protected in many of these areas does not warrant large expenditures for direct artificial control operations. However, a considerable control effect could be obtained through the proper timing of salvage logging to remove infested trees in all areas. The seriousness of losses and the likelihood of continued heavy tree killing would warrant that every effort be made to salvage all infested trees one or more times during the season of beetle activity, and to include in the salvage program a removal of individual trees of immediate high risk to beetle attack.

(d) Douglas-fir beetle. Of particular notice during the aerial survey was heavy killing of Douglas fir in local areas of fir type on north exposures. Activity by this bark beetle is gradually depleting these fir areas but in no instance were conditions noted which would warrant immediate action for direct control. Salvage of infested trees is to be recommended in lieu of direct control operations.

(e) Ips beetles in pinyon pine. Pinyon pine suffered severe mortality as a result of the recent drought years and large areas of the pinyon type have been killed. Ips beetles readily attacked these drought-killed trees, developing large populations during 1951 and 1952, and as a result they are now attacking and killing other trees in the vicinity of all drought areas. The conversion of the pinyon-type to unstocked lands may be desirable as a means of increasing grazing capacity of some of these areas, however, the Ips beetles emerging from the pinyon pine are also attacking and killing ponderosa pine on adjacent areas. The broad nature of infestations in the pinyon-type precludes control to prevent attack and loss of ponderosa pine. Therefore, salvage of the ponderosa pine is recommended pending a reduction of the Ips populations by natural means.

COCONINO NATIONAL FOREST. Arizona

(a) Pine bark beetles. Tree mortality resulting from attacks by bark beetles appear to be of an endemic nature in all areas. The heavier losses sustained in the pine stands in the vicinity of Mt. Elden and Sunset Crater during 1950 and 1951 have subsided during the current year, presumably as a result of the salvage program initiated in these stands during the past 2 years. Scattered tree-killing occurs throughout the virgin timberlands and is particularly noticeable in the southern portion of the forest, but the rate of loss does not indicate epidemic conditions and direct action for control is not warranted at the present time. A small concentration of current loss occurs in virgin timber in the vicinity of Turkey Butte, Lee Butte and southwest of Buck Mountain, but these conditions are not serious and can be remedied by prompt salvage. The terrain in all of the Coconino appears to be ideally suited for salvage-type operations and it is recommended that every effort be made to salvage all trees currently infested to minimize loss rates in these areas. In many areas, salvage operations have been highly effective as a means of utilizing beetle-killed trees and for control of infestations wherever operations and equipment have been developed for this type of logging. Illustrations of mobile equipment suitable for salvage work are being furnished to the Timber Management personnel on the Forest for their use in promoting and fostering salvage programs.

(b) Spruce bark beetle. The loss of Engelmann spruce on portions of the San Francisco Mountains as a result of attacks by the spruce bark beetle has been heavy in local areas over the past several years. The status of current infestations have not been determined and will not be known until ground surveys are made during 1953. There is no apparent need at present to consider direct action for control but wherever possible it is recommended that tree mortality be salvaged to minimize the possibility of additional loss.

(c) Douglas fir beetle. In local areas on the north side of Kendrick Peak and on the north slopes of Saddle Mountain, tree-killing as a result of attacks by this bark beetle is heavy. The dead trees appear to have been killed during the past few years but the exact status of infestations will not be known pending a ground survey of the area during 1953.

CORONADO NATIONAL FOREST. Arizona

(a) Pine bark beetles. Tree-killing as a result of attacks by pine bark beetles was noted in the highly developed recreational area on Mt. Lemmon during the course of aerial reconnaissance. The status of bark beetles in the pine stands of this area has not been determined by ground inspection. However, the value of this recreational area warrants a high degree of protection against tree-killing causedby bark beetles. From aerial counts, it is estimated that there are approximately 250 trees currently infested in this area. A ground survey is planned in the near future and results will be reported at the conclusion of this inspection.

CROOK NATIONAL FOREST. Arizona

(a) Bark beetles. During the course of aerial reconnaissance, an epidemic infestation of bark beetles in pine and fir timber was noted on Mt. Graham. Current tree mortality in the area, occurring in groups of from 3-8 trees, is spread over most of the timbered area on the mountain but seems to be concentrated in an area of approximately 15,000 acres in an elevational zone ranging from 7,500 to 9,500 feet. Ponderosa pine appears to be more severely affected than Douglas-fir although loss in both tree species is severe and exceeds the combined losses of the past several years. By using aerial counts of dead trees, it is estimated that the losses for the past 3 or 4 years has amounted to approximately 10 million board feet. The current infestation is estimated at 12,000 trees. Pending an appraisal survey in this area to determine the exact status of bark beetle broods and a precise estimate of control needs, it is recommended that salvage operations be initiated to remove the infested trees as a means of reducing current beetle populations.

(b) Spruce bark beetle. The loss of Engelmann spruce along the eastern portion of the timbered area on Mt. Graham has been heavy, presumably the result of attack by the spruce bark beetle over the course of the past several years. The steep terrain on this portion of the timbered area on Mt. Graham precludes any action for control although there are other areas of accessible spruce type subject to attack by epidemic populations of this bark beetle. The status of this pest and possible needs for control as protection to the accessible stands of spruce will be determined during the course of examination of the infestation in pine and Douglas fir, as noted above.

GILA NATIONAL FOREST. New Mexico

(a) Bark beetles. The status of current forest insect infestations throughout the extensive timberlands comprising the Gila National Forest can be considered as endemic. Although considerable insect-caused tree mortality was noted in pine, Douglas-fir, fir, and spruce, during the course of the aerial reconnaissance, no concentrations of loss occurred which would warrant direct action for control. It is to be expected that increased loss resulting from bark beetle attacks will occur in the vicinity of the recent fires on the forest but the remote nature of the areas would prohibit treatment by direct means. Extensive killing of Douglas-fir occurs on north slopes throughout the forest area but the bleached nature of many of the snags indicates that this mortality mis not all of recent occurrence. There were no situations noted on the Forest which would require special ground examination to determine status of broods and an appraisal for needs in control.

KAIBAB NATIONAL FOREST. Arizona

(a) Pine bark beetles. The pine stands throughout the north and south portions of the Kaibab Forest were noted as being particularly free of current insect-caused losses. A scattering of trees killed during 1952 occurred on portions of the ranger districts comprising the south half of the Forest, and to some extent on the Kaibab Plateau north of the Grand Canyon, but in no case were dead trees noted in any concentration. No evidence was found of a recurrence of the Black Hills beetle on the Kaibab Plateau and activity by other species of Dendroctonus and Ips appearsto have subsided materially during 1952 over conditions reported during 1950 and 1951.

(b) Spruce budworm. The status of the current infestation of spruce budworm in stands of Engelmann spruce and fir timber on areas adjacent to the North Rim, Grand Canyon National Park, has been made the subject of a memorandum submitted in mid-September. Identification of parasites collected in the infestation area have been made and they were found to be primary parasites of the budworm. A determination of trends of budworm population will be known by mid-June, 1953, at which time precise needs for control can be determined.

LINCOLN NATIONAL FOREST. New Mexico

(a) Pine bark beetle. Bark beetle infestations throughout the pine stands of the Lincoln National Forest are currently of a low endemic rate following heavier losses of the past several years. Infested trees were noted throughout all areas but they occurred primarily as singly-killed individuals and were widely scattered. The widespread tree-killing as a result of Ips attacks in the viminity of the large fire at Allan Canyon apparently has subsided as no evidence of continued loss was noted.

(b) Douglas-fir beetle. Tree killing as a result of attacks by the Douglas-fir beetle was noted to be quite heavy in several local areas but the exact status of these infestations are not known at present. The nature of tree-killing indicates that infestations have persisted in local areas for several years, gradually increasing the size of group killing each season. Salvage of infested trees is recommended to prevent additional loss in the local areas.

(c) The Douglas-fir looper and spruce budworm. Large scale tree-killing in virgin stands of Douglas-fir over an area of approximately 10,000 acres in the Sacramento Mountains was averted during June, 1952 by aerial application of insecticides to control heavy populations of the Douglas-fir looper and spruce budworm. A portion of this infestation escaped control action, however, and heavy infestation still occurs in a portion of the outbreak area. During late October, another center of looper defoliation was detected in Dark Canyon, and it is estimated that a total of approximately 5,000 acres of infestation will require control action during June of 1953 to prevent heavy loss. The exact status of defoliator populations will be determined during the early spring months, at which time precise needs for control will be known.

PRESCOTT NATIONAL FOREST. Arizona

(a) Pine bark beetles. With the exception of a few small groups of poles attacked and killed by Ips beetles during 1952, the pine stands of the Prescott Forest were found to be exceptionally free of insect-caused loss. The fringe of virgin timber in the vicinity of Sheridan Mountain and Hide Creek Mountain was noted to contain a concentration of scattered current loss and it is suggested that these infested trees be salvaged to prevent a possible build-up of bark beetle populations in these local areas.

SANTA FE NATIONAL FOREST. New Mexico

(a) Spruce budworm. Infestations of the spruce budworm occur throughout most of the mixed conifer stands on the Forest. Several of these infestations have persisted in local areas for many years without causing severe tree mortality and without need for direct artificial action for control. The current infestation in most areas is of light intensity but severe defoliation in some local areas could cause heavy loss. A subject report of the status of spruce budworm on the Colonias Ranger District has been submitted with recommendations to await decisions for control action pending a determination of severity of infestations during 1953.

(b) Tent caterpillar. Epidemic infestations of the Great Basin tent caterpillar still persist in many of the aspen stands on the Forest. It is expected that the repeated defoliation will result in tree-killing to a point where conifer species will replace the aspen groves. Infestations were not noted in any of the heavily-used recreational areas.

(c) Douglas-fir beetle. Several areas were noted throughout the forest where small groups of Douglas-fir have been killed as a result of attacks by the Douglas-fir beetle. None of these infestations were of proportions, however, which would require direct action for control. It is suggested that wherever possible, infested trees be salavaged to lessen the likelihood of a build-up of beetle populations and resulting heavier loss.

(d) Spruce bark beetle. During the course of aerial reconnaissance, several local areas were noted where spruce killing resulting from attacks by the spruce bark beetle were heavy. Of particular note was the concentration of spruce killing in portions of the San Pedro Mountains. The exact status of infestations in this area and possible needs for control will not be known pending ground surveys of the areas during the summer months of 1953.

(e) Pine bark beetles. Tree-killing as a result of attacks by pine bark beetles was noted throughout most of the pine stands of the Forest. For the most part, infested trees were widely scattered and occurred primarily as singly-killed individuals. An exception to the endemic infestations over a majority of the pine stands of the Forest, however, is the epidemic infestation on Glorieta Mesa. A subject report of this outbreak has been submitted recommending modification of the current salvage logging program as a means for control. Proper timing of salvage logging to remove infested trees, together with a selective removal of trees currently of high risk to attack by the beetle would aid materially as a means of reducing losses in all areas.

(f) Ips beetles in pinyon pine. The extensive killing of pinyon pine on portions of the Forest and adjacent lands apparently has been a result of the severe drought during 1950-1951. Ips beetles have developed large populations in these drought-killed areas and presently are killing large numbers of additional trees without benefit of tree weakening from deficiencies in precipitation. It is expected that Ips populations will subside in these areas as a result of natural control factors within the next few years.

SITGREAVES NATIONAL FOREST. Arizona

Bark beetles. Of particular note during the course of aerial reconnaissance over the Sitgreaves National Forest was the current low level of loss in all pine areas. This favorable condition of loss apparently has resulted from the concerted effort by District Rangers to salvage all of the beetle-killed trees as promptly as evidence of infestation was noted by fading color of the foliage. Some concentration of tree mortality was noted in Douglas fir in local areas, but in no case was loss occurring in sufficient proportions to warrant control action other than that which could be obtained through the salvage of infested trees.

TONTO NATIONAL FOREST. Arizona

(a) Pine bark beetles. No infestations of any consequence were noted on any portion of the Tonto National Forest. A minor amount of tree-killing in fringe pine areas used for recreation occurs in the vicinity of the Payson Ranger Station, but this loss is not severe and action for direct control is not considered necessary.

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Current status of major forest insect pests. National Forests, Region 3, season of 1952

Since the establishment of the Forest Insect Laboratory in Albuquerque on September 1, 1952, an attempt has been made to determine the status of major forest insect pests throughout the Region and to appraise the needs for control in problem areas.

Reports of survey findings have been made for several insect outbreaks where direct action for control seemed warranted and where control methods were known to be effective. In addition to the reports of specific outbreaks, it is felt that the current status of major forest insect pests throughout the region should be reported for the value this information may have in planning salvage logging or other forest operations to lessen the loss caused by bark beetles and other insects.

Accordingly, a brief accounting of the current conditions of loss caused by forest insect pests in each of the National Forests, as determined by ground surveys and aerial reconnaissance, is submitted herewith for your information.

Enclosure

cc: Dr. Beal
Mr. Keen